Auto-Inflatables!

FY06 Operating Season
Field Test

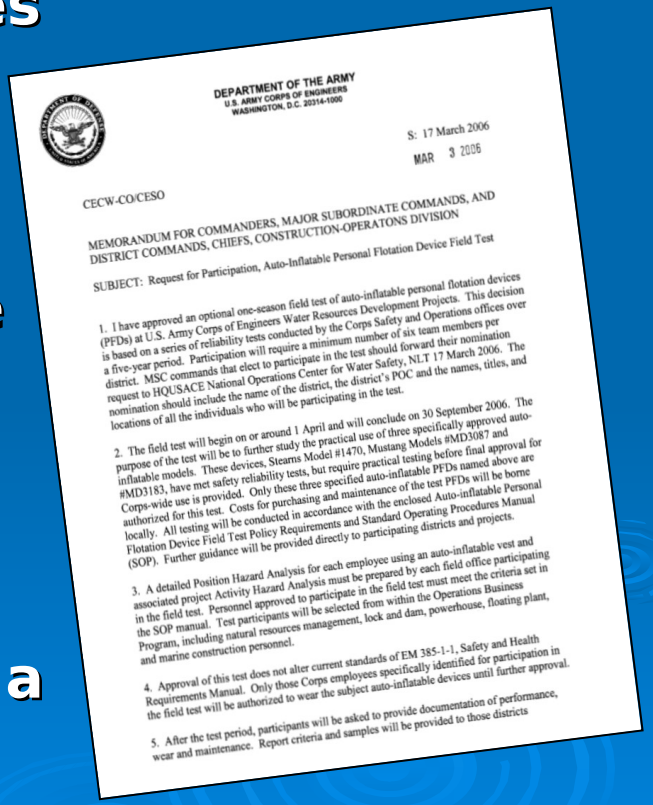
Training Program

You have been approved to participate in the FY06 Auto-Inflatable PFD Field Test

This training program is designed to familiarize you with the test conditions, approved devices and the unique features of auto-inflatable PFDs

Why the test?

- **EM 385-1-1, Safety and Health Requirements Manual, currently requires personal flotation devices (PFDs) for all employees working in, on or around water**
- **Safety Manual does not authorized automatic inflatable life jackets (suspender type)**
- **Deputy Director of Civil Works authorized Operations and Safety Office to jointly conduct a one season controlled test of three specific devices**



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
WASHINGTON, D.C. 20314-1000

S: 17 March 2006
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MEMORANDUM FOR COMMANDERS, MAJOR SUBORDINATE COMMANDS, AND DISTRICT COMMANDS, CHIEFS, CONSTRUCTION-OPERATONS DIVISION

SUBJECT: Request for Participation, Auto-Inflatable Personal Flotation Device Field Test

1. I have approved an optional one-season field test of auto-inflatable personal flotation devices (PFDs) at U.S. Army Corps of Engineers Water Resources Development Projects. This decision is based on a series of reliability tests conducted by the Corps Safety and Operations offices over a five-year period. Participation will require a minimum number of six team members per district. MSC commands that elect to participate in the test should forward their nomination request to HQUSACE National Operations Center for Water Safety, NLT 17 March 2006. The nomination should include the name of the district, the district's POC and the names, titles, and locations of all the individuals who will be participating in the test.

2. The field test will begin on or around 1 April and will conclude on 30 September 2006. The purpose of the test will be to further study the practical use of three specifically approved auto-inflatable models. These devices, Stearns Model #1470, Mustang Models #MD3087 and #MD3183, have met safety reliability tests, but require practical testing before final approval for Corps-wide use is provided. Only these three specified auto-inflatable PFDs named above are authorized for this test. Costs for purchasing and maintenance of the test PFDs will be borne locally. All testing will be conducted in accordance with the enclosed Auto-inflatable Personal Flotation Device Field Test Policy Requirements and Standard Operating Procedures Manual (SOP). Further guidance will be provided directly to participating districts and projects.

3. A detailed Position Hazard Analysis for each employee using an auto-inflatable vest and associated project Activity Hazard Analysis must be prepared by each field office participating in the field test. Personnel approved to participate in the field test must meet the criteria set in the SOP manual. Test participants will be selected from within the Operations Business Program, including natural resources management, lock and dam, powerhouse, floating plant, and marine construction personnel.

4. Approval of this test does not alter current standards of EM 385-1-1, Safety and Health Requirements Manual. Only those Corps employees specifically identified for participation in the field test will be authorized to wear the subject auto-inflatable devices until further approval.

5. After the test period, participants will be asked to provide documentation of performance, wear and maintenance. Report criteria and samples will be provided to those districts

Field Test Criteria

- Includes all MSCs; participation is optional
- Covers FY06 operating season, ending September 30, 2006
- Test will be for three specific commercial-rated devices: Stearns Model #1470 and Mustang Models #MD3087, #MD3183
- Includes personnel from:
  - Natural Resources Management
  - Locks and Dams
  - Powerhouses
  - Floating Plant
  - Marine Construction

Field Test Criteria

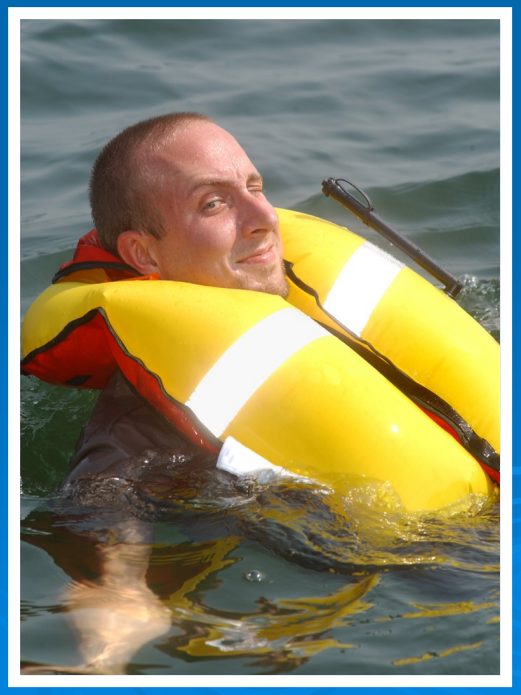
- Participants must be able to
  tread water
- Procurement of equipment will be the responsibility of participating offices
- Current EM 385-1-1 provisions in force during field testing.
  - Limited test period defined
  - Only authorized test participants are approved to use these devices under specific test conditions

What do we hope to learn?

- Field test will provide additional information prior to full program implementation
  - Employee comfort level
  - Maneuverability
  - Procurement and maintenance costs
  - Care and storage issues

Approved test devices

- **Stearns #1470**
  - **With Halkey-Roberts 1F inflator, Velcro closure**



Approved test devices

- **Mustang Survival #MD3087**
  - **With Halkey-Roberts 1F inflator, Velcro closure**

Approved test devices

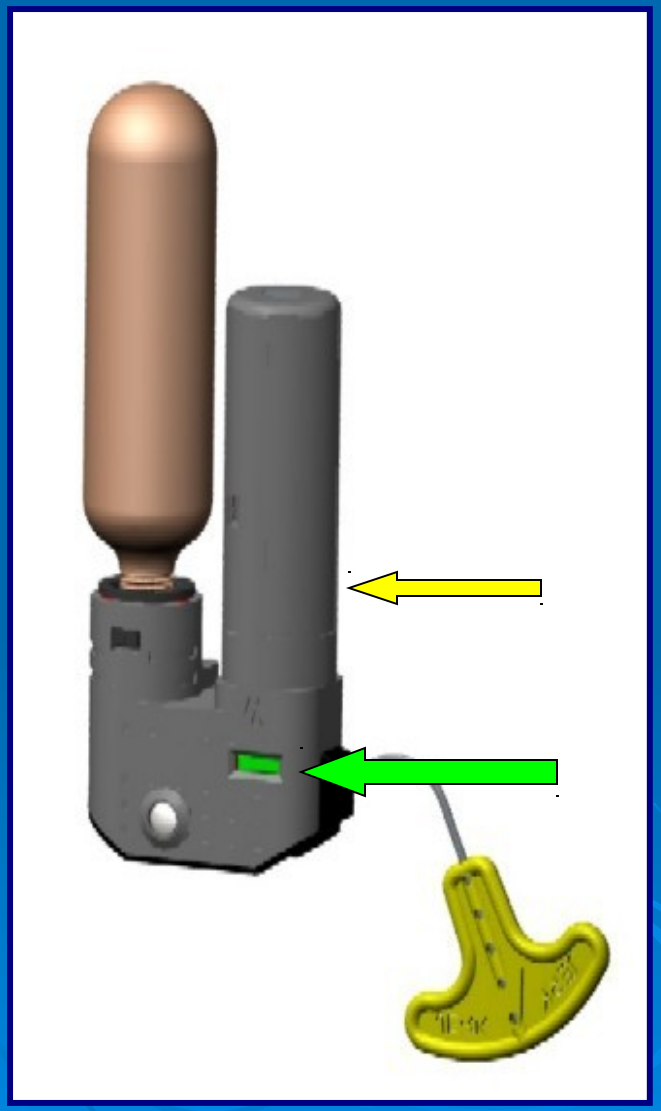
Mustang Survival #MD3183 – with Hammar MA-1 inflator, break-away zipper closure

Inflators explained

Halkey-Roberts 1F Inflator

Features:

- Inflation bladder never has to be opened to rearm the unit
- Increased splash resistance - The firing system (super bobbin) is protected from water splash
- Performs in extreme high humidity conditions
- Single-point indication - "ready" status at a glance
- User-friendly – easy and inexpensive to re-arm
- Uses standard CO2 cylinder



Inflators explained

Hammar MA-1

- Hammar auto-hydrostatic inflator is maintenance free for 5 years

- Works on hydrostatic pressure

- inflates when submerged in 4” of water

- 35 lbs of buoyancy when inflated

- Cylinder is inside bladder and protected against corrosion

Which Device?

- **Now that you've been introduced to the inflator features of each device, you should be ready to decide which model of auto-inflatable PFD you will test during the Field Test.**

Stearns #1470

#MD3087

#MD3183

Requirements

- **At least one of each device tested in the participating district**
- **Procurement direct with manufacturers; local responsibility. Instructions provided in SOP**
- **Must be registered as test participant with supervisor's approval on file**

Costs

- **Stearns #1470**
  - **PFD with 1F inflator = *$113.00* each**
  - **Re-arming kit for #1470 = *$10.70* each**

Costs

- **Mustang #MD3087**
  - **PFD with 1F inflator = *$116.87***
  - **Re-arming kit MA-7202 = *$13.55* each**

Costs

- **Mustang #MD3183**
  - **PFD with Hammar MA-1inflator = *$139.04***
  - **Re-arming kit MA7214 = *$36.07* each**

Optional feature

$6.00 add'l

KNOW YOUR DEVICE

- **Auto-inflatable PFDs will only do their job if you do yours! It is up to you each time you wear the device to assure in advance that it is properly armed and not damaged.**
- **Recognize that these devices differ greatly from PFDs constructed of inherent buoyancy materials.**
- **Read the manufacturer's manual that comes with the device. It will guide you on the unique features of the model you selected.**

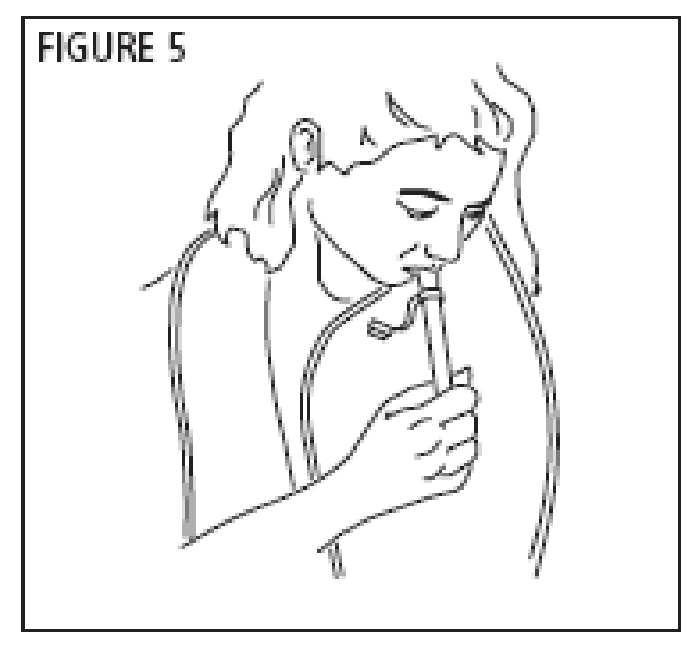
Backup inflation systems

- **These auto-inflatable PFDs also feature manual and oral back-up inflation systems.**

  <u>Manual inflation</u> is triggered by pulling down sharply on the clearly marked la

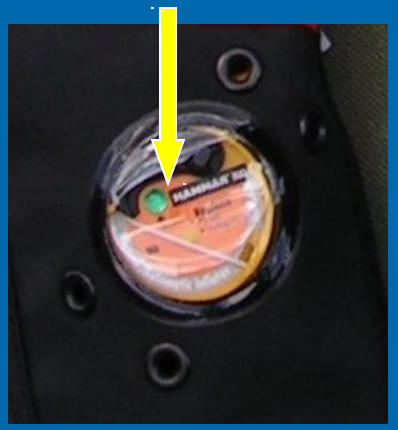
Backup inflation systems

- **<u>Oral inflation</u> is accomplished by blowing into the oral inflation tube located on the wearer's left front panel. This method is an emergency backup system and should be used to add air for additional buoyancy or when testing the device for leaks.**



BEFORE USING YOUR DEVICE

- **ALWAYS visually inspect the cylinder readiness indicator:**
  - **Green means “GO” – your device is armed and ready to go**
  - **Red means “STOP” – your CO^2 cylinder has been discharged**
    - **If red, follow the steps to re-arm and ready your device for use**



Additional Inspection

- **In addition to the inflator device, you should check your PFD for the following:**
  - **Bladders punctures or other damage**
  - **Seams separating, tearing or fraying**
  - **Velcro, zippers, snaps, buckles and connections; be sure closures work properly, in good working order**
  - **Follow other check points described in manufacturer-provided Owner's Manual**

Donning Your Device

- **It is important to properly fit the device to your size. An incorrect fit or improper fastening of attachments could impede its effectiveness.**

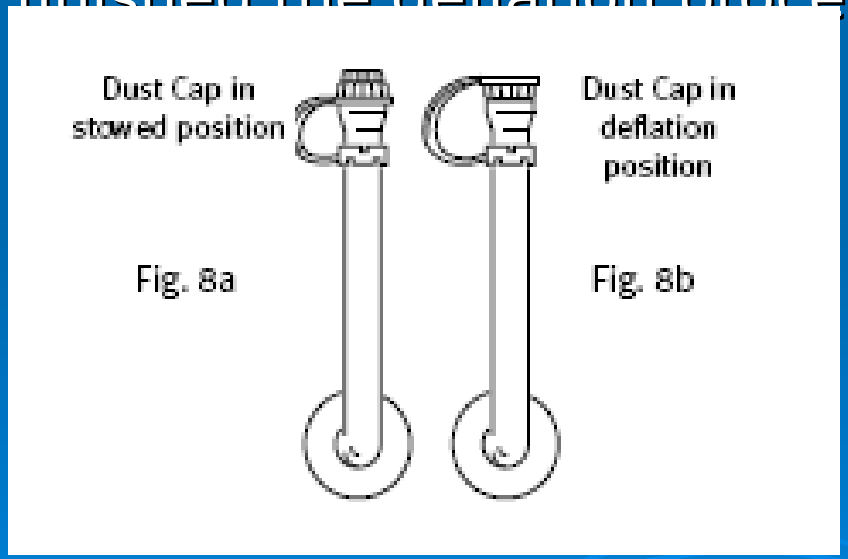
- **Check to assure that belts and straps are already threaded correctly and only need to be adjusted for fit once the device is donned.**

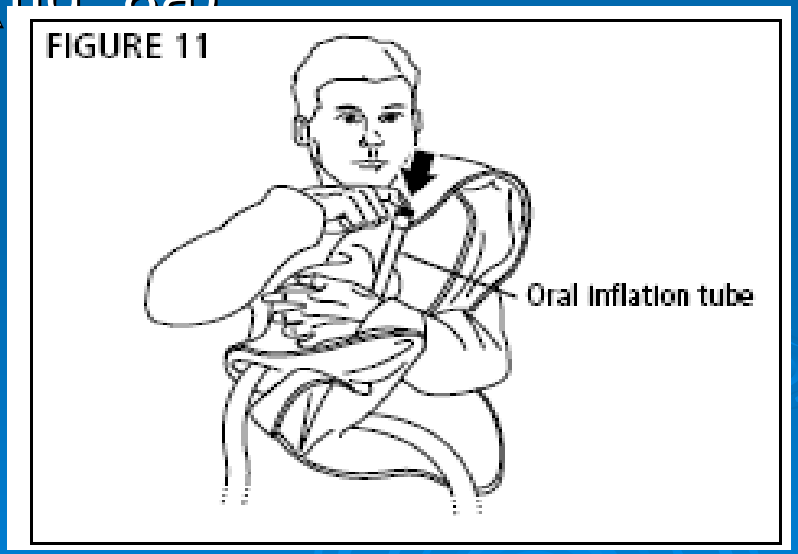
Fitting your inflatable

- Put the device on like a vest and fasten the front buckle. Do not overly tighten the device; be sure to allow room for the inflated bladders should you have to deploy the device. Tuck strap ends into the belt loops of the device.

Deflating Your Device

- Before storing your device, deflate the buoyancy bladder by reversing the oral-inflation tube dust cap and inserting it into the valve (fig. 8b). The cap will not lock position; you must hold it in place. Gently squeeze the bladder(s) until all air or gas has been expelled (fig. 11). Put the inflation tube dust cap back in its normal position on the oral inflation tube when you have finished the deflation process (fig. 8a).





- You can practice this step by blowing air into the bladder and then following the deflation process described above.

Proper Drying

- **To avoid dampness and mildew issues, be sure to properly dry your device anytime it becomes wet.**
- **Mildew is NOT covered by either manufacturer's warranty. To avoid mildew, hang-dry the unit after each use in a well ventilated area away from direct sunlight.**
- **Do not stow the device while drying.**

Re-arming Your Device

- **Follow the instructions provided in your PFD manual for re-arming your device once it has deployed**
- **Take care to properly seat the CO^2 cylinder**
- **Test your device for proper seal using oral inflator**
- **Repack your device**

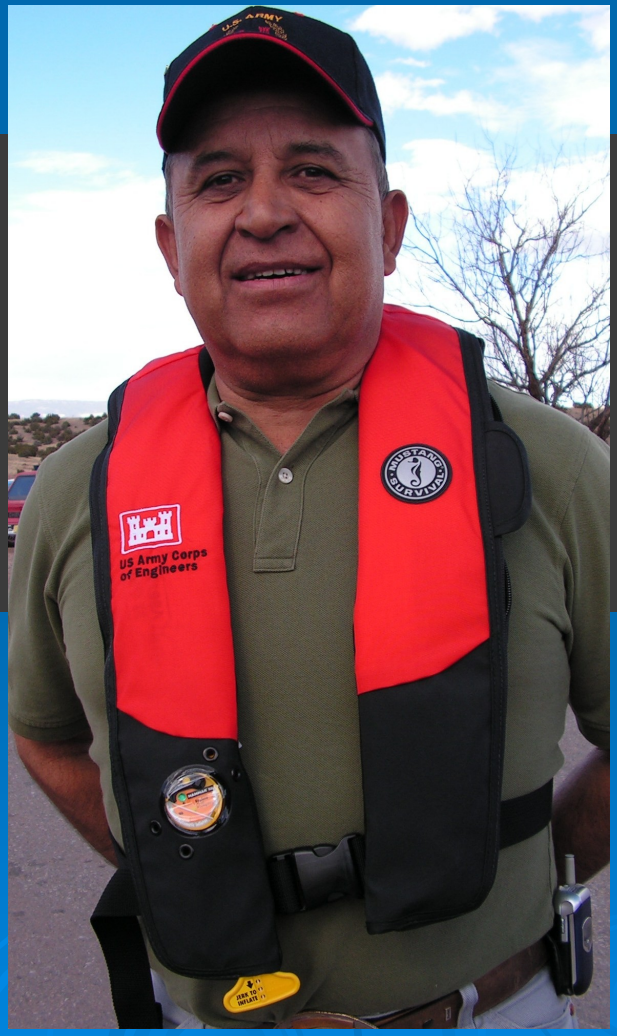
Stearns #1470

Mustang#MD3087

R ur H ts Inflator Device

The Halkey-Roberts inflator is used in both the Stearns #1470 and the Mustang #MD3087 approved for this test.

Re-arming the Hammar MA-1Inflator



Repacking Your Inflatable PFD

Note: Before following the repacking sequence, be sure to properly rearm your Inflatable PFD.

Before repacking, completely deflate the inflation cell. Force excess air out through the inflation tube (Fig. 10). Do not wring cell. Put the inflation tube cap back in the stowed position (Fig. 8a).

REPACKING PROCEDURES

1. Fold lapels (A & B) across the front along the dotted lines (Figs. 14a & b).
2. Fold sides (C & D) inward along dotted lines. Secure sides with Velcro (Fig. 14b) showing partially folded PFD.
3. Fold down the collar (Flap E) along the dotted line and secure with Velcro tabs (Fig. 14c).
4. Make sure the yellow pull knob is on the outside of the folded PFD. Fig. 14d depicts a correctly folded PFD.

Fig. 14a

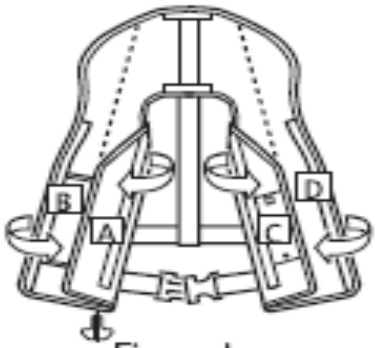


Fig. 14b

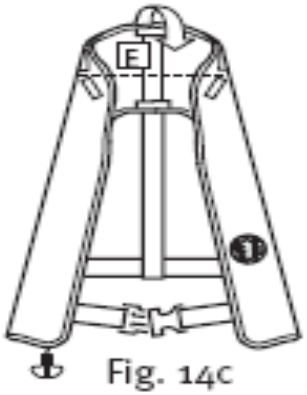


Fig. 14c

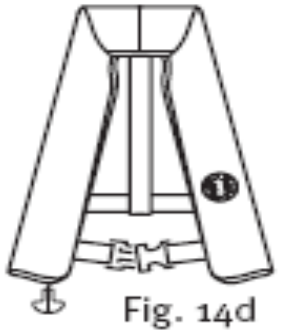
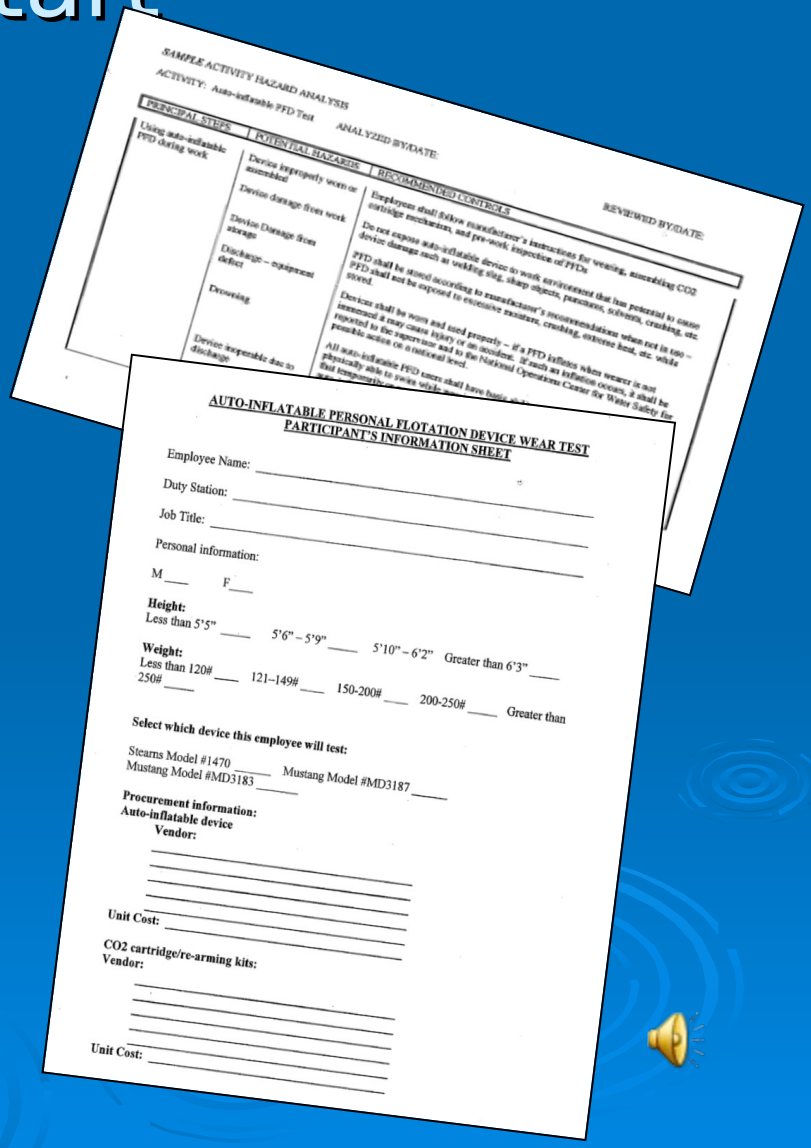


Fig. 14d

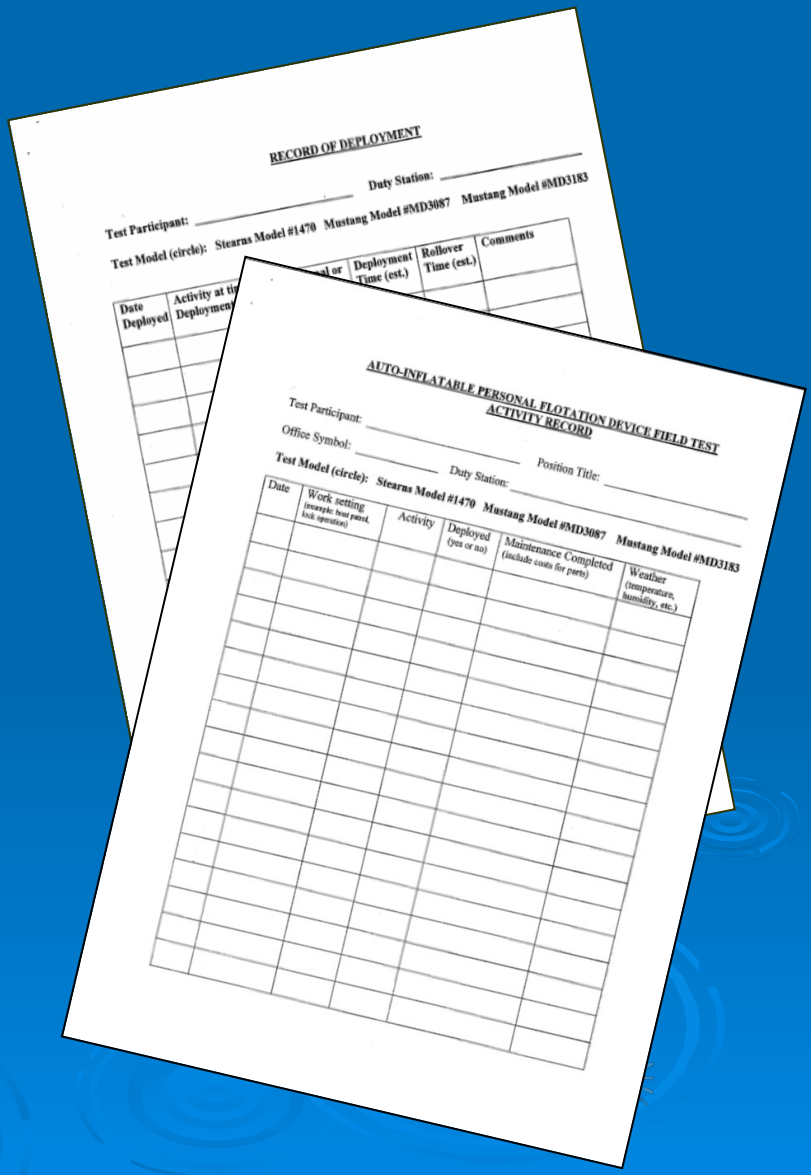
Documentation required at test start

- **As condition for your participation in the field test, you have agreed to provide documentation about the use of your device this season.**
  - **Appendix A must be completed prior to approval for participation**
    - ***Supervisory approval required***
  - **Appendix B (AHA and PHA) should be completed by project or district Safety Officer**
    - ***Sample in SOP***



Documentation required at test end

- **Appendix C – Record of use and maintenance**
  - **To be completed throughout the field test period and submitted at test end**
  - **Documents any device deployments and activity at the time, as well as weather conditions, etc.**
  - **Documents maintenance requirements and activities**



Recommendations

- **Report problems and concerns immediately to your supervisor, safety officer and/or HQUSACE National Operations Center for Water Safety**
- **Comfort and maneuverability feedback is encouraged to be included in final report**
- **Each participant should plan a fall into the water while wearing their inflatable PFD at least once to experience the device deployment**
  - **While it is encouraged for you to do this early in the test period, it can be done as weather permits or at a local pool. It is important to experience the deployment of the device before test end.**

Test follow-up

- **At test end, documentation will be collected and compiled by the HQUSACE National Operations Center for Water Safety**
- **Test results will be analyzed by HQs Safety and Operations staff**
- **Director of Civil Works will be briefed on test results with recommendations discussed related to any policy revisions**

Thank you for your participation!

We look forward to a successful test season.

Please remember, while comfort is an issue, your safety is most important.

Always wear your life jacket and boat safely.